

ABSTRACT OF THE DISCLOSURE

In methods, systems, and computer program products for locating a regularly configured object within a digital image, a plurality of primary rotated integral images of the digital image are computed. Each primary rotated integral image has a different in-plane rotation. A set of secondary rotated integral images are derived from each of the primary rotated integral images. The secondary rotated integral images have further in-plane rotations relative to the respective primary rotated integral image. A window is defined within the digital image and corresponding windows of the rotated integral images. The values of convolution sums of a predetermined set of feature boxes within the window, in each of the rotated integral images are extracted. The dimensionality of the convolution sums is reduced to provide a set of reduced sums. A probability model is applied to the reduced sums to provide a best estimated derotated image of the window.